

WE CLAIM:

1. Nighttime imaging apparatus comprising
achromatic video-image-display output structure, and
optical path structure operatively interposed said output structure and a source of
5 nighttime visual imagery, said path structure including a light intensifier and a non-lightbeam-dividing achromatic video output coupler structure operatively and communicatively interconnecting said intensifier and said output structure.

10 2. Nighttime imaging apparatus comprising
a light intensifier arranged to receive light from a defined nighttime field of view,
and to produce an intensified-light output stream derived from such received light, and
an achromatic, optical-to-electronic imaging instrumentality coupled optically to
said intensifier to receive therefrom said intensified-light output.

15 3. The apparatus of claim 2, wherein said imaging instrumentality is coupled
to said intensifier in a manner whereby substantially all of said intensified-light output
stream is supplied to the instrumentality.

20 4. The apparatus of claim 3, wherein said imaging instrumentality includes
but a single charge-coupled-device.

5. The apparatus of claim 2, wherein said imaging instrumentality takes the
form of structure within a black-and-white video camera.

6. The apparatus of claim 5, wherein said imaging instrumentality includes
but a single charge-coupled-device in said camera.

5 7. Nighttime imaging apparatus comprising
an optical lens structure for gathering light from a defined nighttime field of view,
and for delivering such gathered light as a light output from the lens structure,
a light intensifier optically coupled to said lens structure for receiving therefrom
said light output, and for generating therefrom an intensified-light output, and
10 an achromatic, optical-to-electronic imaging instrumentality coupled optically to
said intensifier to receive therefrom said intensified-light output.

8. The apparatus of claim 7, wherein said imaging instrumentality is
designed to generate an electronic-data output stream from intensified-light output which
15 is received from said intensifier, and which further includes a visual display device
operatively connected to said imaging instrumentality to produce an achromatic, black-
and-white visual display based upon said electronic-data output stream.

9. The apparatus of claim 7, wherein said imaging instrumentality includes
20 but a single charge-coupled-device.

10. The apparatus of claim 7, wherein said imaging instrumentality takes the
form of structure within a black-and-white video camera.

11. The apparatus of claim 10, wherein said imaging instrumentality includes but a single charge-coupled-device structure in said camera.

12. A nighttime imaging method comprising
5 gathering imagery-based available light which relates to a defined nighttime field of view,

intensifying such gathered light, and
producing, without lightbeam splitting, an achromatic light output derived from such intensified light.

10

13. A nighttime imaging method comprising
gathering imagery-based available light which relates to a defined nighttime field of view,

supplying such gathered light to a light intensifier,
15 utilizing the light intensifier, producing thereby a related, intensified-light output derived from light supplied to the light intensifier, and
furnishing such intensified-light output to an achromatic, optical-to-electronic imaging instrumentality for the purpose of creating thereby an electronic-data output stream which is interpretable to form an achromatic visual image.

20

14. The method of claim 13, wherein substantially all intensified-light output produced by the light intensifier is delivered to the mentioned imaging instrumentality.

15. The method of claim 13 which further comprises supplying the electronic-data output stream to a video display device.

16. A nighttime imaging method comprising
5 utilizing a properly deployed light intensifier, creating a light-intensified image which is derived from a non-light-intensified nighttime field of view, and processing that light-intensified image with an optical-to-electronic imaging instrumentality to produce an electronic-data output stream containing solely achromatic optical image information.

10

17. The method of claim 16 which further comprises converting the electronic-data output stream mentioned to a black-and-white, achromatic, displayable image.